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On the Carabidae of the Greek island Karpathos (Insecta: Coleoptera)

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A b s t r a c t : A study of 176 specimens of Carabidae collected in the Greek island Karpathos in December 2015 and January 2016 yielded 17 species, among them a new island-endemic species and three first records from Karpathos. The currently known fauna of Karpathos is composed of 48, that of the Karpathos archipelago of 52 species of Carabidae. Three species are island endemics; the status of one taxon is uncertain.

K e y w o r d s : Coleoptera, Carabidae, Palaearctic region, East Mediterranean, Greece, Karpathos, diversity, zoogeography, endemism, new records.

Introduction

The speciose family Carabidae is among the best-studied families of beetles. According to a recent synopsis (ARNDT et al. 2011), 962 species in 138 genera have been recorded from Greece as a whole; 219 of these species have exclusively been recorded from Greece (mainland and islands). The carabid fauna of the Karpathos archipelago, which is situated in the southeastern Aegean Sea between Crete and Rhodes, was studied by BAEHR (1985). He recorded 48 species from the archipelago and 44 species from Karpathos proper, three of them endemic and the distribution of one confined to Karpathos and Rhodes. The status of one of the three endemics, however, has been subject to controversial interpretation and confusion. *Carabus trojanus oertzeni* GANGLBAUER, 1888, also cited as *C. graecus oertzeni* GANGLBAUER, 1888, is treated as endemic to Karpathos by BAEHR (1985) and in the Palaearctic Catalogue (BOUSQUET et al. 2003), respectively, the latter giving *C. trojanus* DEJEAN, 1826 as a subspecies of *C. graecus* DEJEAN, 1826. ARNDT et al. (2011), on the other hand, list *C. trojanus* as a distinct species distributed in the Aegean Islands (including Crete and not endemic to Karpathos), stating in a footnote that it may be a subspecies of *C. graecus*. Since the latter work is the latest publication on the subject, it is used in the present paper and the respective taxon of *Carabus* is treated as not island-endemic.

According to BAEHR (1985), the carabid fauna of Karpathos is much more closely affiliated with that of Rhodes and southern Anatolia than with that of Crete, an observation that is in agreement with the geological history of this island (ASSING 2016, TRIANTIS & MYLONAS 2009). For additional information on the geological history, the geography, and the vegetation see ASSING (2016).

During a field trip to Karpathos, which primarily aimed at exploring the staphylinid

fauna of the island and which was conducted by the second author in December 2015 and January 2016, Carabidae were collected, too. For a map showing the sample localities see ASSING (2016). For various reasons, species diversity was expected to be rather low in the samples. First, winter is not the optimal season for recording Carabidae. Second, there had been no significant rainfall on the island since May 2015 and all the streams and other wetland habitats were dry, so that nearly all of the ripicolous and other wetland species were missed. Third, the field trip focused on collecting Staphylinidae and consequently on habitats at intermediate and higher altitudes. Nevertheless, 176 specimens of Carabidae belonging to 17 species were found, among them an undescribed island-endemic species, all three previously described island endemics, and three species that had not been recorded by BAEHR (1985).

The reference material of all the species, except *Prioniomus assingi*, is deposited in the private collection of the first author. Andreas Hetzel (Hildesheim) kindly reviewed the manuscript.



Fig. 1: Locality where *Prioniomus assingi* was found (sample number 3).

Results

A species list is provided in Tab. 1. The two previously described island-endemic species are evidently quite common and widespread on Karpathos. This is particularly true of *Trechus schmalfussi*, a winged species which was found across the whole island at altitudes of 250-1100 m, partly in large numbers, primarily by sifting the litter of pine trees and phrygana vegetation, occasionally also under stones. *Tapinopterus*

ganglbauerianus, too, was found in various localities in phrygana, at road margins, and in ruderal habitats at altitudes of 40-870 m, exclusively by turning stones. *Zabrus laticollis*, whose distribution is restricted to Karpathos and Rhodos, was found in two localities at altitudes between 670 and 760 m.

Remarkably, a new, locally endemic species of Anillina, *Prioniomus assingi* GIACHINO & VAILATI, in litt., was discovered close to the peak of Kali Limni, the highest mountain of the island. It was sifted from moist litter, grass roots, and moss beneath a small tree at an altitude of 1190 m (Fig. 1).

Three species, all of them widespread in the West Palaearctic, are reported from Karpathos for the first time: *Amblystomus metallescens*, *Lebia cyanocephala*, and *Trechus quadristriatus*.

Tab. 1: Carabidae collected in Karpathos in December 2015 and January 2016 (all leg. Assing). The species are listed in alphabetical order. In the localities column, the number of specimens is given in parentheses behind the locality number. The sample numbers are identical to those in ASSING (2016). Samples where no Carabidae were recorded are omitted; A-C are additional samples where no Staphylinidae were found. Island-endemic species are marked with an asterisk.

Localities/samples: **1:** N Volada, Lastos, 35°34'40"N, 27°08'23"E, 720 m, road margin, under stones, 23.XII.2015; **2:** Kali Limni, 35°35'14"N, 27°07'37"E, 1070 m, N-slope with phrygana, litter, moss, and grass sifted, 23.XII.2015; **3:** Kali Limni, near peak, 35°35'23"N, 27°07'34"E, 1190 m, moist litter, moss, and grass beneath small tree and shrubs sifted, 23.XII.2015; **5:** N Volada, pista E Lastos to Agios Nikolaos, 35°34'48"N, 27°09'30"E, 680 m, pine forest, pine litter sifted, 24.XII.2015; **7:** S Spoa, 35°36'28"N, 27°08'43"E, 250 m, dry stream valley, litter sifted, 25.XII.2015; **9:** W Spoa, 35°38'56"N, 27°07'56"E, 230 m, stream valley, moist litter sifted, 25.XII.2015; **10:** W Spoa, 35°38'42"N, 27°07'56"E, 210 m, stream valley, moist leaf litter near running water sifted, 25.XII.2015; **10a:** same data, but 31.XII.2015; **11:** SW Spoa, 35°37'42"N, 27°07'24"E, 380 m, pine forest, litter, moss, and grass roots sifted, 25.XII.2015; **12:** S Olympos, 35°43'19"N, 27°10'19"E, 460 m, dry shrub litter between large calcareous rocks sifted; **13:** N Olympos, E Avlona, 35°46'09"N, 27°11'13"E, 260 m, dry margin of pista and dry ruderal habitat, under stones, 26.XII.2015; **14:** Kali Limni, 35°35'16"N, 27°07'34"E, 1100 m, N-slope with phrygana, litter, grass and moss beneath shrubs sifted, 27.XII.2015; **14a:** same data, but under stones; **15:** Kali Limni, trail to Spoa, 35°35'32"N, 27°08'15"E, 870 m, plateau, under stones, 28.XII.2015; **16:** Kali Limni, trail to Spoa, 35°35'23"N, 27°08'18"E, 830 m, phrygana, dry shrub litter sifted, 28.XII.2015; **17:** Kali Limni, trail to Spoa, 35°35'20"N, 27°08'20"E, 800 m, pine litter and grass roots between cushion plants beneath old pine tree sifted, 28.XII.2015; **19:** Kali Limni, trail to Spoa, 35°35'41"N, 27°08'07"E, 900 m, litter and grass between rocks beneath old pine tree sifted, 29.XII.2015; **20:** 3 km SSW Spoa, 35°36'45"N, 27°08'07"E, 760 m, grassy plateau with phrygana, under stones, 30.XII.2015; **21:** 3 km SSW Spoa, 35°36'42"N, 27°08'08"E, 760 m, beneath old pine tree, pine litter and roots near large rocks sifted, 30.XII.2015; **22:** 3 km SSW Spoa, 35°36'49"N, 27°08'08"E, 770 m, pine stand near large rocks, pine litter and roots sifted, 30.XII.2015; **23:** Karpathos, 35°30'35"N, 27°13'08"E, 40 m, terraced dry grassy fallow, under stones, 1.I.2016; **A:** Kali Limni, 35°35"N, 27°08'E, 730-1100 m, under stones, 23.XII.2015; **B:** N Volada, pista Lastos-Agios Nikolaos, 670-700 m, under stones, 24.XII.2015; **C:** Spoa env., 210-380 m, under stones, 25.XII.2015.

Species	Localities/samples
<i>Amblystomus metallescens</i> (DEJEAN, 1829)	1(1)
<i>Bembidion cordicolle</i> JACQUELIN DU VAL, 1829	10(6), 10a(9), 11(1)
<i>Calathus cinctus</i> MOTSCHULSKY, 1850	B(10), C(1)
<i>Calathus fuscipes graecus</i> DEJEAN, 1831	1(1), A(1), B(1)
<i>Carabus coriaceus cerisyi</i> DEJEAN, 1826	B(2)
<i>Carabus trojanus</i> DEJEAN, 1826	14a(1)
<i>Carterus gilvipes</i> (PIOCHARD DE LA BRULERIE, 1873)	12(1)

Species	Localities/samples
<i>Cymindis axillaris axillaris</i> (FABRICIUS, 1795)	17(1), 20(1), A(1)
<i>Lebia cyanocephala</i> (LINNAEUS, 1758)	1(1), B(1)
<i>Licinus aegyptiacus</i> DEJEAN, 1826	23(6)
<i>Microlestes luctuosus luctuosus</i> HOLDHAUS, 1904	2(2), 3(1), 9(1), 14(1), 16(1)
<i>Paratachys bistriatus</i> (DUFTSCHMID, 1812)	10(47), 10a(4)
* <i>Prioniomus assingi</i> GIACHINO & VAILATI, in litt.	3(1)
* <i>Tapinopterus ganglbauerianus</i> (LUTSHNIK, 1915)	1(1), 13(1), 15(1), 20(1), 23(6), B(6), C(1)
<i>Trechus quadristriatus</i> (SCHRANK, 1781)	15(2), A(1)
* <i>Trechus schmalfussi</i> BAEHR, 1983	2(2), 5(1), 7(8), 9(1), 10(1), 10a(1), 12(1), 15(1), 16(2), 19(5), 21(26), 22(1)
<i>Zabrus laticollis</i> APFELBECK, 1904	20(1), B(1)

Zusammenfassung

Während einer Exkursion auf die griechische Insel Karpathos im Dezember 2015 und Januar 2016 wurden 17 Carabidenarten nachgewiesen, darunter eine neue inselendemische Art der Anillina. Drei Arten werden erstmals von Karpathos nachgewiesen. Die derzeit bekannte Carabidenfauna von Karpathos umfasst damit insgesamt 48, die des Karpathos-Archipels 52 Arten, davon drei endemisch; der Status einer früher als endemisch betrachteten (Unter-)Art ist ungeklärt.

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